

ABSTRACT:

Techniques for supporting fault tolerance in communications systems, e.g., cellular communications networks with mobile wireless user devices, are described. In various
5 embodiments end nodes, e.g., mobile devices, store information indicating which other nodes are critical to their operation, e.g., critical to messages and/or signals being properly routed to the individual end node. Different network nodes may be critical to different end nodes. Critical node information stored by an end node may be statically preprogrammed or dynamically generated, or may include a combination of both and static and dynamic information. In some
10 embodiments at least a portion of the information used to determine which nodes are critical to a particular end node is generated dynamically from signaling information, e.g., session control signaling, transmitted and/or received during normal operation of the end node. Faults, failures and/or scheduled outages in various network nodes are detected and/or reported. Fault notification messages are communicated, e.g., broadcast, to nodes, e.g., end nodes, which may
15 be affected by a detected/reported service disruption. End nodes receiving a fault notification message determine if the message indicates a disruption in a node that is critical to the end node receiving the message. If the indicated disruption is in a critical node, the end node takes action to ameliorate the effect of the reported condition, e.g., the end node may initiate a registration operation with a new session signaling server in response to an indicated fault associated with
20 the session signaling server with which the end node was registered. Fault notification messages indicating disruptions in nodes which are not critical to the end node receiving the fault notification message may be ignored once it is determined that the indicated disruption is in a node which is not critical to the end node receiving the message. The invention described herein minimizes service disruption following fault, failure or outage of critical network nodes,
25 improving overall system robustness and resiliency.